

U.S. Application No.:
PRELIMINARY AMENDMENT

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IN THE SPECIFICATION:

Please add the following paragraph after the title:

Cross Reference To Related Application

[0001] This application is a ~~national stage~~ of PCT/JP03/00261 filed January 15, 2003 and is based upon Japanese Patent Application No. 2002-042355, filed January 15, 2002 and Japanese Application No. 2002-213695 filed July 23, 2002 under the International Convention.

Beginning on page 5, please amend paragraphs [00018] to [00028]

[00018] ~~The present invention according to a first claim is relates to a method of specifying SNP related to disease susceptibility or drug responsiveness and comprising: a first step of setting a scanning domain beforehand in the base sequence domain that is the object of SNP analysis; a second step of gradually narrowing down the scanning domain to a localized domain that contains a target SNP; and a third step of specifying the target SNP from the narrowed down localized domain.~~

[00019] ~~Furthermore, The invention according to a second claim is the method of specifying SNP of claim 1 in which the second step comprises a step of setting a marker SNP for specifying the target SNP and gradually narrowing down the scanning domain.~~

[00020] ~~This second step The invention according to a third~~

~~claim is the method of specifying SNP of the second claim in which the second step uses statistical analysis such as haplotype analysis to set the marker SNP.~~

~~[00021] In addition, The invention according to a fourth claim is the method of specifying SNP of claim 3 in which the first step of the comprises: a step of setting the scanning domain of the base sequence domain in a genome domain that is limited to genes whose functions are clearly known or chromosomes whose functions can be predicted; and the second step comprises: a fourth step of selecting a group of SNP to be typed from the scanning domain and performing SNP typing using a wet process; a fifth step of finding the probability of appearance of all combinations of the haplotype analysis in the scanning domain based on typing data of the SNP typing as a statistical amount; and a sixth step of comparing the found statistical amount with a preset or estimated reference statistical amount, and when there is significant deviation between the statistical amount and the reference statistical amount that exceeds a preset threshold, determining that the marker SNP is contained in the domain corresponding to the deviated position that exceeds the threshold value.~~

~~[00022] Furthermore, The invention according to a fifth claim is the method of specifying SNP of claim 4 in which the third step comprises: a seventh step of increasing the specified ratio of the number of SNPs to be the object of typing in the selection of the SNP group in the fourth step when the significant deviation is less than a first threshold value, and then repeating the fifth step; an eighth step of setting a new~~

scanning domain from the scanning domain that has been decreased by a specified ratio such that it contains the position of the deviated peak when the significant deviation is greater than the first threshold value but less than a second threshold value, and then repeating the fifth step; and a ninth step of determining that the marker SNP is contained in the domain corresponding to the deviated position that exceeds the second threshold value when the significant deviation exceeds the second threshold value, setting a new scanning domain from the scanning domain that has been decreased by a specified ratio such that it contains the position of the deviated peak, and then repeating the fifth step.

[00023] Furthermore, The invention according to a sixth claim is the method of specifying SNP of claim 5 in which the ninth step comprises a step of setting SNPs that include the target SNP for which all DNA samples are typed when the number of SNPs in a selected group is less than a specified number.

[00024] In addition, The invention according to a seventh claim is the method of specifying SNP of claim 5 in which the seventh step comprises a step of determining that the target SNP is not contained and stopping the process when the number of times the process of the fifth step is performed exceeds a specified number of times.

[00025] The invention according to an eighth claim is the method of specifying SNP of claim 5 in which further includes an the eighth step comprises comprising a step of determining that the target SNP is not contained and stopping the process when the number of times the process of the fifth step is performed

exceeds a specified number of times.

[00026] In addition, The invention according to a ninth claim is the method of specifying SNP of any one of the claims 1 thru 8 in which the second step comprises a step of typing the SNP using a quality controlled process, and where the quality controlled process performs typing of four SNP on one assay plate for one sample, and determines that the typing data is invalid when the number of typed SNPs found having significant difference by a statistical method such as the Chi-square test exceeds a specified number and identifies the data as being contaminated by contamination of the sample.

[00027] Furthermore, The invention according to a tenth claim is the method of specifying SNP of claim 9 in which the second step repeats SNP typing only for SNP found to have significant difference when the number of typed SNPs found to have significant difference was a specified number, and when the result of no significant difference continues for a specified number of times, determines that the typing data is correct and uses that data.

[00028] Finally, The the present invention according to an eleventh claim is comprises a computer program that can be read by a computer that can execute the processing of the method of specifying SNP of any one of the claims 1 thru 10 in which all of the steps of any one of the claims 1 thru 10 are coded.